REMARKS/ARGUMENTS

Reconsideration of the application is requested.

Claims 4-8 are now in the application. Claim 4 has been amended. New dependent claim 8 has been added.

Claim 8 recites that the first insulating layer is a buffer coating. Support for this feature can be found on page 10, lines 13-25 of the specification of the instant application.

In item 3 on page 2 of the above-identified Office action, claim 1 has been rejected as being indefinite under 35 U.S.C. § 112, second paragraph.

The Examiner refers to claim 1, however, since claim 1 was previously canceled and the objectionable language appears in independent claim 4, applicants assume that the reference to claim 1 was inadvertent and will consider the rejection as applying to claim 4.

More specifically, the Examiner states that the term "50m" is unclear as to what the thickness "m'" represents.

This is an oversight and typographical error, which has been corrected in claim 4. to correctly recite that the first insulating layer has a thickness not greater than --50um--.

Support for these changes may be found on page 3, line 21 of the specification of the instant application.

It is accordingly believed that the claim meet the requirements of 35 U.S.C. § 112, second paragraph. The above noted change to claim 4 is provided solely for clarification. The change is neither provided for overcoming the prior art nor does it narrow the scope of the claim for any reason.

In item 4 under "Claim Rejections - 35 USC 103" on page 2 of the above-identified Office Action, claims 4-7 have been rejected as being unpatentable over Calabrese et al. (U.S. Patent 5,468,597) (hereinafter "Calabrese") in combination with Greenwood et al. (U.S. Patent 5,679,498) (hereinafter "Greenwood") or vice versa, further in combination with Bickford et al. (U.S. Patent 5,800,858) (hereinafter "Bickford") under 35 U.S.C. § 103(a).

The rejection has been noted and the claims have been amended in an effort to even more clearly define the invention of the instant application. Support for the changes is found on page

7, lines 22 to page 8 lines 4 and page 16, lines 15-19 of the specification of the instant application.

Before discussing the prior art in detail, it is believed that a brief review of the invention as claimed, would be helpful. Claim 4 calls for, *inter alia*, a process for metallizing at least one insulating layer of an electronic or microelectronic component, which comprises:

applying at least one first insulating layer to a substrate such that the first insulating layer has a thickness not greater than 50 μm;

activating the entire first insulating layer by treatment with an activator, the activator being at least one of a gas, a liquid, a solution, and a plasma;

then, after activating the entire first insulating layer, applying to the first insulating layer a second insulating layer made of a photosensitive material, and patterning the second insulating layer made of a photosensitive material; and

then, after applying and patterning the second insulating layer, seeding and metallizing regions of the first insulating layer that are exposed by the patterning step. (emphasis added)

Calabrese ,as stated by the Examiner, discloses preparing a substrate, forming ligating groups over the substrate, forming a photoresist and imaging over the ligating layer, selectively applying a seeding layer to the ligating layer and plating (col. 3, lines 40-55). The photoresist also may be applied to the substrate prior to applying the ligating layer. The substrate is silicon.

The Examiner stats that the claimed "activating step" is achieved by the prior art by "ligating layer".

Greenwood, as stated by the Examiner, discloses a method for producing high density multi-layered integrated circuits carriers. Coating a base surface with a photosensitive dielectric material, curing and developing the photosensitive dielectric layer, depositing a catalyst to form a sensitized dielectric layer, applying a photoresist layer, developing and curing the photoresist layer, forming conductors on the exposed dielectric layer and repeating the steps (abstract and col. 8, lines 10-35). The photosensitive layer has a thickness of 0.0007-0.0009 inches. The imaging and patterning

is performed on both dielectric layers (photosensitive and photoresist).

The Greenwood disclosure (col. 8, lines 11-33) relied upon by the Examiner in the rejection states:

"The cured dielectric top surface 81 provides a mounting surface for conductor circuitry. In accordance with the instant invention, copper conductors are formed on the dielectric surface by the following additive process. First, the dielectric surface is chemically sensitized by a process that prepares the dielectric surface such that copper readily adheres thereto. As illustrated in FIG. 14, a layer of photoresist 110 is then applied over the sensitized dielectric layer 80 and allowed to dry. Next, as best illustrated in FIG. 15, the photoresist layer 110 is masked with a transparent sheet 100 containing opaque areas 102 corresponding to the desired circuitry layout. The masked photoresist is exposed to ultra-violet radiation source 70 thereby causing exposed portions of photoresist to cure. The partially cured photoresist layer is developed, as illustrated in FIG. 16, thereby removing uncured portions, with a suitable chemical solution 74 such that portions 112 of said sensitized dielectric surface, representing areas for conductor circuitry, are exposed. Copper conductors 94a-c are formed

upon said exposed, sensitized, dielectric portions 112 by an additive electron process and built-up to a suitable thickness depending on the application (i.e. anticipated current flow), by an electroplating process, thereby forming conductor circuitry."

The Examiner incorrectly equates the "photoresist layer" in Greenwood with the claimed "second insulating layer made of a photosensitive material" recited in claim 4. However, in col. 3, lines 47-49, Greenwood states "[t]he word "photoresist" refers generally to a chemical coating that cures or hardens with suitable exposure to light or radiation." There is no hint or suggestion or disclosure that the photoresist layer in Greenwood is or could be an insulating layer as recited in the claims of the instant application.

The Abstract of Greenwood mentions "a layer of photosensitive dielectric material". However, the "photosensitive dielectric material" is a different from and not the same as the "photoresist" relied upon by the Examiner in Greenwood.

Thus, neither Calabrese nor Greenwood disclose or suggest the claimed feature of a second insulating layer applied to the first insulating layer. Therefore, the combined prior art references do not disclose or suggest all the claim

limitations required for a prima facie case of obviousness.

Bickford does not overcome the deficiencies of Calabrese or Greenwood or any combination of Calabrese with Greenwood. Bickford also discloses a method for metallizing insulation layers, where a first insulation layer is activated, and a second insulation is embodied on the first activated insulation layer. The second insulation is subsequently structured so that partial areas of the first activated insulation layer are freed. The partial areas are subsequently seeded and a metallization is then carried out on the embodied seeding. The claimed invention is not disclosed or suggested by a combination of Calabrese and Greenwood, with Bickford.

It is accordingly believed to be clear that Calabrese in combination with Greenwood, and further in combination with Bickford, whether taken alone or in any combination, either show or suggest the features of claim 4. Specifically, the references do not show "after activating the entire first insulating layer, applying to the first insulating layer a second insulating layer made of a photosensitive material, and patterning the second insulating layer made of a photosensitive material" set forth in claim 4. Claim 4 is, therefore, believed to be patentable over the art and because claims 5-8

are ultimately dependent on claim 4, they are believed to be patentable as well.

In view of the foregoing, reconsideration and allowance of claims 4-8 are solicited.

In the event the Examiner should still find any of the claims to be unpatentable, counsel would appreciate receiving a telephone call so that, if possible, patentable language can be worked out.

Appl. No. 09/817,963
Amdt. dated 4/26/06
Reply to Office action of 11/28/05

Petition for extension is herewith made. The extension fee for response within a period of two (2) months pursuant to Section 1.136(a) in the amount of $450.00 in accordance with Section 1.17 is enclosed herewith.

Please charge any other fees, which might be due with respect to Sections 1.16 and 1.17 to Deposit Account No. 12-1099 of Lerner Greenberg Stemer LLP.

Respectfully submitted,

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FDP/bb

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